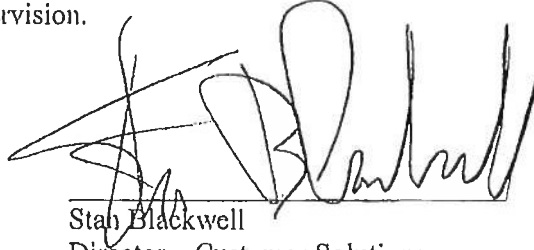


Virginia Electric and Power Company
Case No. PUR-2018-00065
Environmental Respondents
Sixth Set

The following response to Question No. 12 of the Sixth Set of Interrogatories and Requests for Production of Documents Propounded by the Environmental Respondents received on June 28, 2018 has been prepared under my supervision.



Stan Blackwell
Director – Customer Solutions
Dominion Energy Virginia

Question No. 12

Request 6-12. Reference the response to ER 1-39.

- a) Is the Company in possession of firm evidence of specific new data centers or data center expansions in 2020 or later years? If so, identify the nature of the evidence (such as contracts) and the total quantity of incremental peak load by year.
- b) Is the Company in possession of firm evidence of specific new data centers or data center expansions in 2019 or later years? If so, identify the nature of the evidence (such as contracts) and the total quantity of incremental peak load by year.

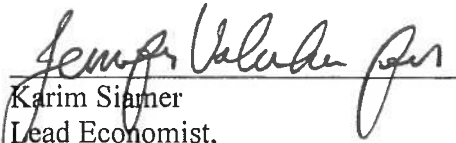
Response:

The Company objects to this request as vague, overly broad, unduly burdensome, potentially voluminous, and not relevant or reasonably calculated to lead to the production of admissible evidence in this proceeding to the extent it seeks “firm evidence” in the Company’s “possession.” The Company further objects to this request to the extent it seeks confidential customer information. Notwithstanding and subject to these objections, the Company provides the following response.

See the Company’s objections and response to ER Set 6-4.

Virginia Electric and Power Company
Case No. PUR-2018-00065
Environmental Respondents
Sixth Set

The following response to Question No. 13 of the Sixth Set of Interrogatories and Requests for Production of Documents Propounded by the Environmental Respondents received on June 28, 2018 has been prepared under my supervision.


Karim Siamer
Lead Economist,
Load Research and Forecast
Dominion Energy Services, Inc.

Question No. 13

Reference the response to ER 4A-1(b) and Attachment ER Set 1-4(a) at p. 7.

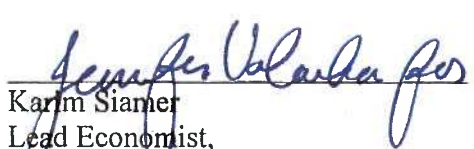
- a) Define “fit” as used in this response.
- b) Identify the measure or measures that were used to evaluate fit.
- c) Identify the time period over which the fit was evaluated.

Response:

- a) The term “Fit” refers to calculation of the values for the parameters of the Bass Diffusion Model (“Bass Model”). A Bass Model adoption curve is “fitted” to historical data center demand data and used to predict future data center demand. In this way, the model provides a reasonable long-term forecast of data center demand growth.
- b) See pages 6-7 of the Rebuttal Testimony of Eric Fox submitted in the 2017 Plan proceeding (Case No. PUR-2017-00051), including his Rebuttal Schedule 1.
- c) 2001-2017

Virginia Electric and Power Company
Case No. PUR-2018-00065
Environmental Respondents
Sixth Set

The following response to Question No. 14 of the Sixth Set of Interrogatories and Requests for Production of Documents Propounded by the Environmental Respondents received on June 28, 2018 has been prepared under my supervision.


 Karim Siamer
 Lead Economist,
 Load Research and Forecast
 Dominion Energy Services, Inc.

Question No. 14

Reference Attachment ER 1-4(a), page 8: "The Bass Diffusion equation is fit to the historical annual Data Center MW loads".

- a) Confirm that Bass Diffusion equation is fit to column W "actual" in Attachment Staff Set 2-16, tab Trend_Calc. If not confirmed, identify the data to which the Bass Diffusion equation was fit.
- b) Confirm that column W "actual" is calculated based on column F "MW_Idx", which in turn is calculated based on column B "DC_MW". If not confirmed, explain your understanding.
- c) Identify the source of the historical data in column B "DC_MW". (Note: the source is not identified in the Itron report referenced in the response to ER 1-38 and other responses, and in any case historical data center data would have been provided to Itron by the Company).
- d) For 2009 and each earlier year in column B "DC_MW" (2001 through 2009), the value is set to 0.9 times the value in the following year. Identify the source of this assumption. Provide the basis for this assumption.

Response:

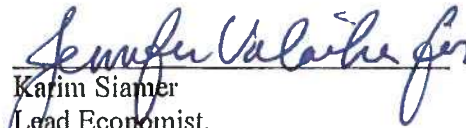
- a) It is the Company's understanding that the Bass Diffusion equation was not fit to Column W, but column F.
- b) Confirmed.
- c) The Company provided historical DC_MW (as shown in Column B) for the years 2010

through 2016.

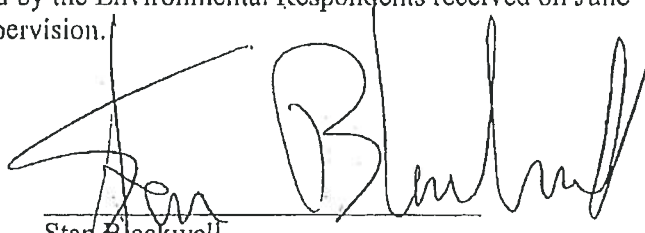
- d) Itron is the source for this assumption.

Virginia Electric and Power Company
Case No. PUR-2018-00065
Environmental Respondents
Sixth Set

The following response to Question No. 15(a-c, e) of the Sixth Set of Interrogatories and Requests for Production of Documents Propounded by the Environmental Respondents received on June 28, 2018 has been prepared under my supervision.


 Karim Siamer
 Lead Economist,
 Load Research and Forecast
 Dominion Energy Services, Inc.

The following response to Question No. 15(d) of the Sixth Set of Interrogatories and Requests for Production of Documents Propounded by the Environmental Respondents received on June 28, 2018 has been prepared under my supervision.


 Stan Blackwell
 Director -- Customer Solutions
 Dominion Energy Virginia

Question No. 15

Reference Attachment ER 1-4(a), p. 7: "The primary objective in fitting the Bass Diffusion model is to provide a forecast of Data Center sales that can then be compared to Dominion's internal 5-year anticipated firm Data Center growth which has been trended beyond 2022 at a declining rate of annual growth through 2025 and then at a fixed rate of growth thereafter. The difference between these curves results in the forecast of long-term incremental Data Center sales above that embedded in the estimated base Commercial sales model regression trend and incremental coincident peak loads not embedded in the Peak and Energy Model estimated regression trend."

These sentences suggest that "Dominion's internal 5-year anticipated firm Data Center growth which has been trended beyond 2022 at a declining rate of annual growth through 2025 and then at a fixed rate of growth thereafter" is the same as the forecast of "Data Center sales ... embedded in the estimated base Commercial sales model regression trend."

- a) If this is not correct, please explain.

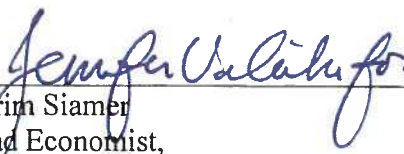
- b) Is "Dominion's internal 5-year anticipated firm Data Center growth..." the column labeled DCSales_Corp in Attachment Staff 2-16, tab DC_BSALES? If not, provide it or identify where in other data requests it can be found.
- c) Is "Data Center sales embedded in the Commercial sales model" the column labeled DCSales_Corp in Attachment Staff 2-16, tab DC_BSALES? If not, provide it or identify where in other data requests it can be found.
- d) Clarify how "Dominion's internal 5-year anticipated firm Data Center growth which has been trended" was prepared, and what it is supposed to represent.
- e) Clarify how "Data Center sales embedded in the Commercial sales model" was prepared, and what it is supposed to represent.

Response:

- a) It is not correct to characterize the internal 5-year forecast the same as the embedded data center sales. The 5-year plan includes both the embedded and the projected firm new data center projects.
- b) It is included. See the rows labelled November 2017-December 2022.
- c) It is not. The "Data Center sales embedded in the Commercial sales model" has not been calculated.
- d) The short-term data center forecast was developed using six different regression models based on historical growth adjusted for future trend expectations. Five of these models were developed for the five largest data center companies within the Company's service territory and contain confidential customer information. The sixth model provided a forecast for all other data centers within the Company's service territory. These six models were then added together to develop the short-term data center forecast.
- e) The Company did not prepare Data Center sales embedded in the commercial sales model. It represents actual data centers sales, corporate five-year data centers plan, and completed with declining growth rate.

Virginia Electric and Power Company
Case No. PUR-2018-00065
Environmental Respondents
Sixth Set

The following response to Question No. 17 of the Sixth Set of Interrogatories and Requests for Production of Documents Propounded by the Environmental Respondents received on June 28, 2018 has been prepared under my supervision.


Katim Siamer
Lead Economist,
Load Research and Forecast
Dominion Energy Services, Inc.

Question No. 17

Reference Attachment Staff Set 2-16, tab Trend_Calc.

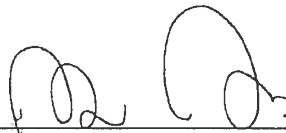
- (a) Column J "Cum_Idx" is scaled such that 2009 = 1.0. Explain why 2009 was chosen for this purpose.
- (b) Would the data center forecast be different if a different year was chosen for this scaling (say, 2008, or 2010)? If so, provide the resulting forecasts. If not, explain why not.

Response:

(a-b) The Company adopted the values determined by Itron, which the Company hired in 2017 to review the Company's long-term demand forecasts and develop an independent demand forecast for the Company's load service area. As such, the Company has not conducted analysis regarding an alternative base year.

Virginia Electric and Power Company
Case No. PUR-2018-00065
Environmental Respondents
Ninth Set

The following response to Question No. 2 of the Ninth Set of Interrogatories and Requests for Production of Documents Propounded by the Environmental Respondents received on July 18, 2018 has been prepared under my supervision.



Karim Siamer
Lead Economist,
Load Research and Forecast
Dominion Energy Services, Inc.

The following response to Question No. 2 of the Ninth Set of Interrogatories and Requests for Production of Documents Propounded by the Environmental Respondents received on July 18, 2018 has been prepared under my supervision as it pertains to legal matters.



Vishwa B. Link
McGuire Woods LLP

Question No. 2

Reference the response to ER 6-3: Provide all documents supporting the claim that the Bass Diffusion Model is “a standard modeling approach for forecasting the adoption of new technologies.”

Response:

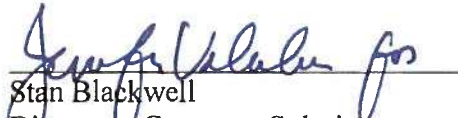
The Company objects to this request as overly broad, unduly burdensome, voluminous, and not relevant or reasonably calculated to lead to the production of admissible evidence to the extent it seeks “all documents.” Notwithstanding and subject to these objections, the Company provides the following response.

This characterization is based on Itron’s use of the Bass Diffusion Model to model data center demand growth which they note is a common approach to fitting an S-shaped curve to new

technology adoption when econometric modeling proves inadequate. See the Rebuttal Testimony of Eric Fox submitted in the 2017 Plan proceeding (Case No. PUR-2017-00051), including Section 2.9 of his Rebuttal Schedule 1.

Virginia Electric and Power Company
Case No. PUR-2018-00065
Environmental Respondents
Ninth Set

The following response to Question No. 3 of the Ninth Set of Interrogatories and Requests for Production of Documents Propounded by the Environmental Respondents received on July 18, 2018 has been prepared under my supervision.


Stan Blackwell
Director - Customer Solutions
Dominion Energy Virginia

The following response to Question No. 3 of the Ninth Set of Interrogatories and Requests for Production of Documents Propounded by the Environmental Respondents received on July 18, 2018 has been prepared under my supervision as it pertains to legal matters.


Vishwa B. Link
McGuire Woods LLP

Question No. 3

Reference the response to ER 6-4: Provide all documents and “underlying data” supporting the claim that there are 58 potential data center projects with a requested capacity of 1,696 MW.

Response:

The Company objects to this request as overly broad, unduly burdensome and potentially voluminous to the extent it seeks “all documents.” The Company further objects to this request as not relevant or reasonably calculated to lead to the production of admissible evidence in this proceeding, as the information regarding the 58 potential data center projects discussed in the Company’s response to ER Set 6-4 was provided in support of the Company’s statements regarding “significant interest in data centers locating in Virginia,” but otherwise was not used by the Company to develop the short-term forecast in the 2018 Plan, due to the speculative nature of the information. Finally, the Company objects to this request to the extent it seeks confidential customer information, as was stated in the response to ER Set 1-37 and in ER Set 6-4, information that the Company cannot release without specific written customer consent by all


potential customers. Notwithstanding and subject to these objections, the Company provides the following response.

See Attachment ER Set 9-3 (SB) for a spreadsheet listing the 58 projects and their associated capacity. No identifying customer information is included in Attachment ER Set 9-3 (SB). Note that the 1,696 MW figure previously provided in the Company's response to ER Set 6-4 was incorrect. The correct capacity value of the 58 projects is 3,883 MW. This response should be considered as a correction to the Company's prior response to ER Set 6-4.


As a note, these projects represent requests for information and do not represent committed projects. As such, this information is not used to prepare the short-term forecast described in the Company's response to ER Set 6-15(d). All additional customer information is confidential, and cannot be provided by the Company without specific written consent by all potential customers.

Virginia Electric and Power Company
Case No. PUR-2018-00065
Environmental Respondents
Ninth Set

The following response to Question No. 4 of the Ninth Set of Interrogatories and Requests for Production of Documents Propounded by the Environmental Respondents received on July 18, 2018 has been prepared under my supervision.


Stan Blackwell
Director – Customer Solutions
Dominion Energy Virginia

The following response to Question No. 4 of the Ninth Set of Interrogatories and Requests for Production of Documents Propounded by the Environmental Respondents received on July 18, 2018 has been prepared under my supervision as it pertains to legal matters.


Vishwa B. Link
McGuire Woods LLP

Question No. 4

Reference the response to ER 6-8, which requested the data provided in Confidential Attachment Staff Set 7-92(b) (Supp 6-26-2018) for each data center customer. Provide the requested load data, without any associated customer identification or customer personal information.

Response:

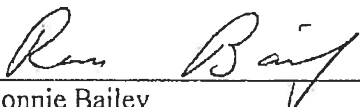
The Company objects to this request to the extent it seeks confidential customer information, which cannot be provided in any format such that the identity of the customer is protected and cannot be provided without specific written consent by all customers. Notwithstanding and subject to this objection, the Company provides the following response.

Staff Set 7-92(b) requested the “[h]istoric hourly load data for an *existing typical* data center for the period 2014 to present...” (emphasis added), which the Company provided in its supplemental response to (6-26-2018) for a representative data center customer. Providing the

historical hourly load data “for each data center customer” as requested here, even without providing “any associated customer identification or customer personal information,” would allow an informed external party the ability to determine the identity of the customer based on the scale of usage and growth demonstrated by the historical hourly load data, which is itself confidential and proprietary to the Company’s customers. Put simply, the historical hourly load data is the “associated customer identification or customer personal information,” and cannot be provided without the customers’ identities being potentially revealed and cannot be provided without specific written consent by all customers.

Virginia Electric and Power Company
Case No. PUR-2018-00065
Environmental Respondents
Ninth Set

The following response to Question No. 5 of the Ninth Set of Interrogatories and Requests for Production of Documents Propounded by the Environmental Respondents received on July 18, 2018 has been prepared under my supervision as it pertains to load projections.

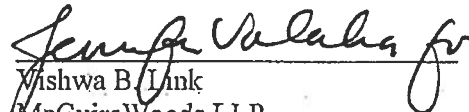


Ronnie Bailey
Manager Planning and Strategic Initiatives
Dominion Energy Virginia

The following response to Question No. 5 of the Ninth Set of Interrogatories and Requests for Production of Documents Propounded by the Environmental Respondents received on July 18, 2018 has been prepared under my supervision as it pertains to load forecasts prepared for the 2018 Plan.

Karim Siamer
Lead Economist,
Load Research and Forecast
Dominion Energy Services, Inc.

The following response to Question No. 5 of the Ninth Set of Interrogatories and Requests for Production of Documents Propounded by the Environmental Respondents received on July 18, 2018 has been prepared under my supervision as it pertains to legal matters.



Vishwa B. Link
McGuire Woods LLP

Question No. 5

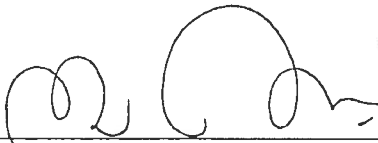
Reference the response to ER 6-10, Attachment ER 6-10(RB) (NOVEC load projections).

Virginia Electric and Power Company
Case No. PUR-2018-00065
Environmental Respondents
Ninth Set

The following response to Question No. 5 of the Ninth Set of Interrogatories and Requests for Production of Documents Propounded by the Environmental Respondents received on July 18, 2018 has been prepared under my supervision as it pertains to load projections.

Ronnie Bailey
Manager Planning and Strategic Initiatives
Dominion Energy Virginia

The following response to Question No. 5 of the Ninth Set of Interrogatories and Requests for Production of Documents Propounded by the Environmental Respondents received on July 18, 2018 has been prepared under my supervision as it pertains to load forecasts prepared for the 2018 Plan.



Karim Siamer
Lead Economist,
Load Research and Forecast
Dominion Energy Services, Inc.

The following response to Question No. 5 of the Ninth Set of Interrogatories and Requests for Production of Documents Propounded by the Environmental Respondents received on July 18, 2018 has been prepared under my supervision as it pertains to legal matters.

Vishwa B. Link
McGuireWoods LLP

Question No. 5

Reference the response to ER 6-10, Attachment ER 6-10(RB) (NOVEC load projections).

- a) Provide the latest load projections, redacted of confidential information, for each of the DOM Zone LSEs (NOVEC, ODEC, CVEC, and NCEMC).
- b) Provide any other forecasts of these entities' sales or peak loads the Company may possess from the past two years.

Response:

(a)-(b) The Company objects to this request as not relevant or reasonably calculated to lead to the production of admissible evidence to the extent it seeks information that was not used to develop the 2018 Plan. The Company further objects to this request as overly broad and unduly burdensome to the extent it seeks "any other forecasts" that "the Company may possess from the past two years," which includes load projections, sales or peak load forecasts potentially containing customer confidential information specific to other DOM Zone LSEs. Notwithstanding and subject to these objections, the Company provides the following response.

The Company provided NOVEC's load projection in response to ER Set 6-10 as a follow up to ER Set 1-38, which requested "all documents and communications between the Company and PJM pertaining to the representation of data center growth in PJM's 2018 forecast for the Dominion Zone." Because an email included in the Company's response to ER Set 1-38 referenced a NOVEC load projection, the Company obtained approval from NOVEC to provide the load projection, with NOVEC's confidential customer information removed. However, as noted in the response to ER Set 6-10 and reiterated here, NOVEC's load projections were not used to develop the load forecast in the Company's 2018 Plan, nor were any other DOM Zone LSEs' load projections or forecasts of sales or peak loads. As noted previously (see, for example, the Company's response to ER Set 1-49), the 2018 Plan was prepared for the DOM LSE and not the DOM Zone; therefore the load projections or forecasts of sales or peak loads of other LSEs in the DOM Zone are not reflected in the load forecast developed in the 2018 Plan.

See the Company's response to ER Set 6-10 for the latest NOVEC load projection available to the Company.

Virginia Electric and Power Company
Case No. PUR-2018-00065
Environmental Respondents
Ninth Set

The following response to Question No. 7 of the Ninth Set of Interrogatories and Requests for Production of Documents Propounded by the Environmental Respondents received on July 18, 2018 has been prepared under my supervision.



Karim Siamer
Lead Economist,
Load Research and Forecast
Dominion Energy Services, Inc.

Question No. 7

Reference the response to ER 6-15(e) ("The Company did not prepare Data Center sales embedded in the commercial sales model.").

- a) Does the commercial sales model embed some data center sales history?
- b) Does the commercial sales model project some data center sales growth?
- c) If the answer is affirmative to both parts (a) and (b), identify the portion of the commercial sales model forecast that is data center sales (embedded, before adjustment).

Response:

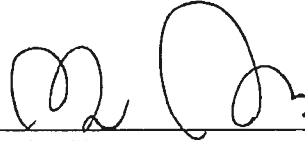
(a) Yes.

(b) Yes.

(c) The Company does not identify the amount of data center sales that are embedded in the commercial sales forecast, because the Company models the commercial sales as a bloc.

Virginia Electric and Power Company
Case No. PUR-2018-00065
Virginia State Corporation Commission Staff
Second Set

The following response to Question No. 16 of the Second Set of Interrogatories and Requests for Production of Documents Propounded by the Virginia State Corporation Commission Staff received on May 9, 2018 has been prepared under my supervision.



Karim Siamer
Lead Economist,
Load Research and Forecast
Dominion Energy Services, Inc.

Question No. 16

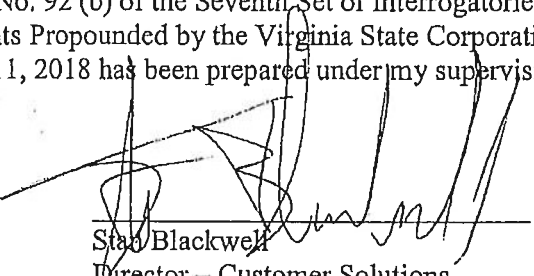
Please provide the Company's historic and forecasted load associated with data centers for the 25-year study period (2018-2043) as an excel spreadsheet with formulas intact.

Response:

Historic and forecasted data centers loads and sales are provided in Attachment Staff Set 2-16 (KS). The data center sales can be found in column D of the sheet labeled 'DC_BSALES,' and the data center load in on the same sheet in column I.

Virginia Electric and Power Company
Case No. PUR-2018-00065
Virginia State Corporation Commission Staff
Seventh Set

The following response to Question No. 92 (b) of the Seventh Set of Interrogatories and Requests for Production of Documents Propounded by the Virginia State Corporation Commission Staff received on June 11, 2018 has been prepared under my supervision.


Stan Blackwell
Director – Customer Solutions
Dominion Energy Virginia

The following response to Question No. 92 (b) of the Seventh Set of Interrogatories and Requests for Production of Documents Propounded by the Virginia State Corporation Commission Staff received on June 11, 2018 has been prepared under my supervision as it pertains to legal matters.


Vishwa B. Link
McGuireWoods LLP

Question No. 92

Please provide the following load data for the Dominion LSE as an excel spreadsheet with all formulas intact:

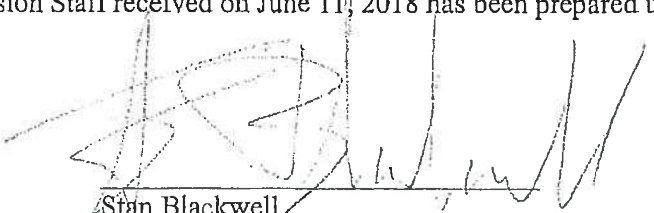
- (b) Historic hourly load data for an existing typical data center for the period 2014 to present;

Responses:


- b) The Company objects to this request as vague, overly broad, unduly burdensome, potentially voluminous, and not relevant or reasonably calculated to lead to the production of admissible evidence in this proceeding to the extent it seeks historic hourly load data for “an existing typical data center” from 2014 to present that was not used to develop the 2018 Plan. The Company further objects to this request to the extent it would require original work.

Virginia Electric and Power Company
Case No. PUR-2018-00065
Virginia State Corporation Commission Staff
Seventh Set

The following **supplemental** response to Question No. 92 (b) (dated June 26, 2018) of the Seventh Set of Interrogatories and Requests for Production of Documents Propounded by the Virginia State Corporation Commission Staff received on June 11, 2018 has been prepared under my supervision.


 Stan Blackwell
 Director – Customer Solutions
 Dominion Energy Virginia

The following **supplemental** response to Question No. 92 (b) (dated June 26, 2018) of the Seventh Set of Interrogatories and Requests for Production of Documents Propounded by the Virginia State Corporation Commission Staff received on June 11, 2018 has been prepared under my supervision as it pertains to legal matters.


 Wishwa B. Link
 McGuire Woods LLP

Question No. 92

Please provide the following load data for the Dominion LSE as an excel spreadsheet with all formulas intact:

- (b) Historic hourly load data for an existing typical data center for the period 2014 to present;

Response:

- b) The Company objects to this request as vague, overly broad, unduly burdensome, potentially voluminous, and not relevant or reasonably calculated to lead to the production of admissible evidence in this proceeding to the extent it seeks historic hourly load data for “an existing typical data center” from 2014 to present that was not used to develop the 2018 Plan. The Company further objects to this request to the extent it would require original work.

See Confidential Attachment Staff Set 7-92(b) (Supp 6-26-2018) for the historic hourly load data of a representative data center customer from 2014 to present. Confidential

Attachment Staff Set 7-92(b) (Supp 6-26-2018) contains confidential information as designated by yellow highlighting and is being provided pursuant to the protections set forth in 5 VAC 5-20-170, the Hearing Examiner's Protective Ruling and Additional Protective Treatment for Extraordinarily Sensitive Information entered on May 18, 2018, as modified by the Hearing Examiner's Rulings dated June 7, 2018 and June 14, 2018, any subsequent protective order or protective ruling issued in this proceeding, and the Agreements to Adhere executed pursuant to any such orders or rulings.

CERTIFICATE OF SERVICE

I hereby certify that the following have been served with a true and accurate copy of the foregoing via first-class mail, postage pre-paid:

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SOUTHERN ENVIRONMENTAL LAW CENTER

DATED: August 10, 2018